

WHAT IS CLAIMED IS:

1. An asymmetric L-shaped slotted meander line-less broadband antenna, comprising:

a ground plane;

L-shaped radiators including a horizontally extending plate parallel to said ground plane and a vertically extending plate having an upper edge spaced from an edge of said horizontally extending plate so as to form a slot;

a short across said slot adjacent one end thereof;

a capacitive element positioned across said slot adjacent the other end thereof;

and,

a feed point for said antenna between said ground plane and said vertically extending plate.

2. The antenna of Claim 1, wherein said antenna has a $\frac{1}{4}$ wave point, said short and capacitive element configured such that the impedance of the slot line is close to zero at said $\frac{1}{4}$ wave point.

3. The antenna of Claim 2, wherein said short and capacitive element are configured to maximize slot line impedance and radiator reactance cancellation across the bandwidth of said antenna.

4. The antenna of Claim 1, and further including a shunt between said vertically extending plate and said ground plane.
5. The antenna of Claim 4, wherein said last mentioned shunt was between a lower corner of said vertically extending plate and said ground plane, thus to increase antenna gain at the low frequency end of said antenna.
6. The antenna of Claim 1, wherein said antenna is a miniaturized antenna having dimensions suitable for use in a hand-held device:
7. The antenna of Claim 6, wherein said hand-held device includes a clamshell housing and wherein said miniaturized antenna is housed within one of the clamshell portions.
8. The antenna of Claim 1, wherein said antenna is tuned for maximum broadband gain by movement of said short along said slot.
9. The antenna of Claim 1, wherein said antenna is tuned for maximum broadband gain by movement of said capacitive element along said slot.
10. The antenna of Claim 1, wherein said capacitive element is an L-shaped element.

11. The antenna of Claim 10, wherein said L-shaped capacitive element has two orthogonal plates positioned across mid-slot such that said orthogonal plates are spaced from associated sides of said vertically and horizontally extending plates said orthogonal plates overlie.

12. The antenna of Claim 11, wherein said antenna is tuned to maximum broadband gain by the spacing of said orthogonal plates from respective vertically and horizontally extending plates.

13. The antenna of Claim 1, wherein said antenna is tuned for maximum broadband gain by the physical configuration of said capacitive element.

14. A method of reducing the cost of a broadband L-shaped slotted antenna having its broadband response created by a meander line across the two orthogonally oriented plates that create the L-shaped antenna, comprising the step of

substituting for the meander line an asymmetric assemblage of a short across one end of the slot formed by the two orthogonally oriented plates and a capacitive shunt across the other end of the slot, the assemblage mimicking the action of the removed meander line.

15. The method of Claim 14, wherein the antenna has a ground plane and further including shunting of one of the orthogonal plates to the ground plane.

16. A method of canceling transmission line impedance with the reactance of an L-shaped antenna across the operating bandwidth of the antenna, comprising the steps of:

spacing apart two orthogonally oriented antenna radiators so as to form a slot between the adjacent edges of the radiators;

bridging one end of the slot with a short adjacent the one end; and

shunting the other end of the slot with a capacitive element, thus to form an asymmetrical L-shaped broadband antenna.

17. The method of Claim 16, and further including the step of adjusting the position of the short to maximize broadband gain of the antenna.

18. The method of Claim 16, and further including adjusting the position of the capacitive element to maximize broadband gain of the antenna.

19. A miniaturized broadband antenna for use in a PDA, comprising:

a ground plane;

L-shaped radiators including a horizontally extending plate parallel to said ground plane and a vertically extending plate having an upper edge spaced from an edge of said horizontally extending plate so as to form a slot;

a short across said slot adjacent one end thereof;

a capacitive element positioned across said slot adjacent the other end thereof;
and,

a feed point for said antenna between said ground plane and said vertically extending plate.

20. A miniaturized broadband antenna for use in an ultra-wideband transceiver comprising:

a ground plane;

L-shaped radiators including a horizontally extending plate parallel to said ground plane and a vertically extending plate having an upper edge spaced from an edge of said horizontally extending plate so as to form a slot;

a short across said slot adjacent one end thereof;

a capacitive element positioned across said slot adjacent the other end thereof;

and,

a feed point for said antenna between said ground plane and said vertically extending plate.